

MASSACHUSETTS PLOUGHMAN



VOL. LVII. - NO. 22.

BOSTON, MASS., SATURDAY, FEBRUARY 26, 1898.

WHOLE NO. 2931

MASSACHUSETTS PLOUGHMAN
NEW ENGLAND AND AGRICULTURE

Official Organ of the N. E. Agricultural Society
LINUS DARLING,
PROPRIETOR.
ISSUED WEEKLY AT
JOHN HANCOCK BUILDING
178 DEVONSHIRE STREET, BOSTON, MASS.
NEW YORK OFFICE,
150 NASSAU STREET, NEW YORK CITY.

TERMS:
\$2.00 per annum, in advance. \$2.50 if not paid in advance. Postage free. Single copies \$0.25. Paper discontinued, except at the option of the proprietor until all arrears are paid.
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Rates of Advertising:
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6 1/4 cents for each subsequent insertion.

AGRICULTURAL.

PRUNE when the limbs are small.

A CARELESS hired man is bad enough hoeing corn, but he is worse than useless in fancy dairy.

WHEN a cow is in very poor condition it will affect the quality of her milk. The longer a cow stays in milk the smaller the yield and the richer the milk.

ICE houses must be filled now if at all. More and more every year farms are putting up their own ice, using it to cool milk and butter, and to preserve eggs, fruit and vegetables in warm weather.

THE best kind of a tree to order, everything considered, is one about two years of age, with a straight whip four to five feet high. Such a tree will be likely to live, will grow fast and the top can be formed any way that is wanted.

WOOD hauling and teaming manure should be done as much as possible before the busy time of early spring. Fine compost is needed for the early crops and the heap should be pulled over and mixed. Stop overheating by tramping down and adding water.

IT is not finished before now, the year's supply of firewood should be worked up and packed in the shed. Cold weather is the time to saw and split wood. No amount of grease will make a saw run easily in warm weather and through dry wood. Such work is very trying to back and saw alike, while wood with the frost out is very hard to split.

FEBRUARY is a good month in which to trim trees when the weather permits. Fruit trees should be scraped at the same time as far up as the tool will reach. The surplus wood and interfering branches should be removed, and the larger wounds covered with grafting wax, or at least with thick paint. Take away all young sprouts not fitted to make good branches.

IT will pay to spend plenty of time with the farm animals and poultry. A cow well wintered is half summered while a hen that is not made to lay in winter will never pay much of a profit to her owner. A farmer who studies his animals, who learns their way of looking at things and who supplies their real wants always gets a return for his trouble.

THE majority of large apple growers in the northwest seem to be adopting the close-setting system of orcharding. They cut out the alternate north and south rows soon after the trees come into bearing, later on they cut out the alternate east and west rows when the trees become crowded, thus the permanent orchard is left with trees 30 feet apart. During the first few years a great many more apples are obtained than by the usual methods.

A Promising Fodder Plant.

The new forage crop, Japanese barnyard millet, is attracting a good deal of attention. In rich land it grows six feet high and produces nearly as much green stuff as does fodder corn. It is hard to dry for hay on account of the thick stems, but when cut away and fed green, the cattle like it better than fodder corn, and it produces more milk and makes good ensilage.

Without Hired Help.

Many small farmers find they can get along best without hiring help. They should manage crops which can be attended to alone and with which most of the work can be done with machinery. The worst pull comes in haying time when there is considerable hoeing which needs to be done right away. The mowing machine, horse rakes and hay fork help out the struggle. If a silo exists there is more difficulty when the time comes to fill it. It is possible to cut ensilage and fill a silo alone. Hiring a little help then will pay if ever. Dairying, poultry and a little mixed farming is a good business for the one-man farm.

Don't Throw Land Away.

It is a mistake to let the pastures grow up to mixture of brush and worthless wood. The owner should decide at once whether it is worth while to clear it off for pasture. If not let him do the next best thing, which is either to plant it to orchard trees or some valuable timber or nut tree. A field of pitch pines for instance, although it will not mature for 40 years, will even when half grown cause the land to sell for much more than it left to brush.

Apple trees can be grown on such land although it is rather slow work. But anything profitable is better than the mixture of scrub oak, brush and berry bushes usually found on such land.

The Popular New Feeds.

The use of corn meal for milk cows is being gradually supplanted by other products. Many farmers in the milk producing districts whose ration used to be the old one of half shorts and half corn meal now substitute gluten and cottonseed meal, claiming that in this way they get more milk, with less risk of injury to the cow.

Map the Orchard.

Labels on the fruit trees are a nuisance, for attached by wires they are sure to cause injury to the tree by tightening of the wire as the tree grows. If not attached by wire they are likely to get lost. The best plan is to make a rough map of the orchard, marking all the varieties and keeping the map where it will not get lost.

Where mulching material is used for young trees, it is necessary to put on wire tree protectors or the mice will burrow under the hay and gnaw the trees.

A Cheap Silo.

The most convenient time to build a silo, if it is to be located inside the barn, is during the last part of the winter, when part of the hay is out of the way and when there is comparative leisure for such work. A plain, small silo, six feet square and sixteen feet deep of two thicknesses of rough boards with tarred papers between, can be put up at a cost not to exceed \$25, but it will pay to use planed and jointed boards. Paint the inside with tar or gasoline paint. In building a silo allow a cubic foot capacy for each cow per day.

For house plants use garden earth, dry and sifted barnyard manure and a little wood ash.

Stock and Dairy Notes.

The smallest successful silo on record so far as known is that of a Rockland County, N. Y., farmer, who puts up ensilage for a herd of two cows. The silo is circular, the ensilage keeps well, and the silo is much esteemed by its owner.

Gluten meal is becoming more and more popular. When it is used with plenty of shorts, cows seem to stand very high feeding without injury.

A Long Island dairy farmer finds his dairy cows cost him to keep \$45 to \$50 a year, each, on the average. He feeds 40 pounds of corn ensilage, five to ten pounds hay, from 15 to 18 pounds of grain, consisting of a mixture of bran, middlings and brewer's grain. This is liberal feeding. He sold from fourteen cows \$2280 worth of milk in one year.

If some one would discover how to pick out the calves that would make good cows, he would be a benefactor indeed. At present about the best that can be done is to look to the record of mother and both grandmothers and pick out the calves with good form, well shaped udder, and without a tendency to grow fat.

Feed the calf to make a strong body: oats, bran, linseed meal, clover meal. Give it as much milk as can be spared.

Gasoline engines are becoming quite popular on the farm as a source of power. It is always ready to start by simply turning a wheel, requires no engineer and unlike a horse and treadmill does not back or kick or require touching up with a whip.

Feed Trees.

For orchard trees on rough, unplowed land a good dressing is a pound of manure of potash and half a pound nitrate of soda spread over the surface three or four feet around the tree. As the trees grow larger, more should be used. Professor Maynard says, "I would not advise anyone to plant fruit trees on rough land unless they can put on as much fertilizer in value as it would cost to cultivate, and unless they keep the brush cut to save loss of moisture." In addition to the above the land should be of good quality, that is good enough to raise corn or potatoes except for the rocks and brush.

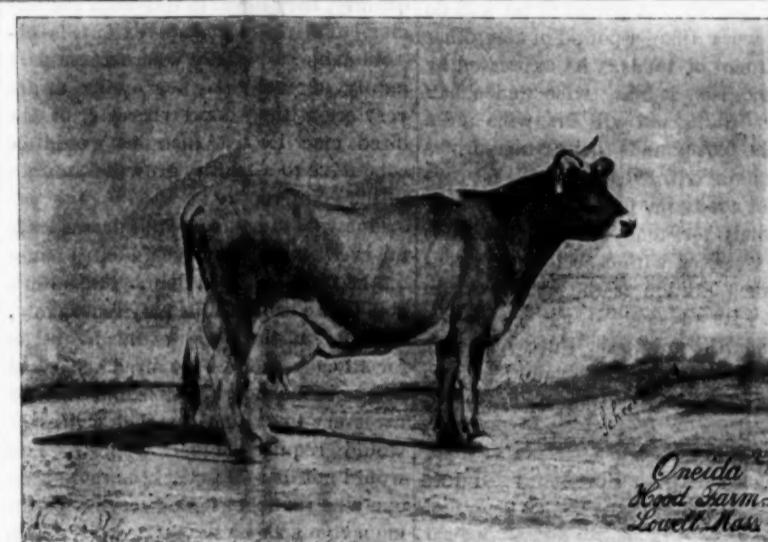
12,734 Lbs. Milk in One Year.

Oneida 42,100, shown in our illustration this week, was dropped March 11, 1885. She is out of that grand old cow, Doe, and is by Combination, being one of the few daughters left of that great bull. Combination has 25 tested daughters and over 70 granddaughters with butter records, among them being the Hood Farm cows, Brown Bessie and Merrie Maiden, the champion cows at the World's Fair, and the only Jersey cows that proved superior to all rivals at the pall and churn.

Oneida is a large cow, weighing nearly 1000 pounds. She dropped a calf when 11 years and 7 months old, and milked in one day 50 lbs. 5 oz. In one week she gave 335 lbs. 3 oz. which made 16 lbs. 13 oz. of marketable butter. By marketable butter we mean butter that is made for the table of one of the largest and best hotels in Boston, the Adams House. Oneida's milk record for the year from Oct. 17, 1896, to Oct. 17, 1897, was 12,734 lbs. 11 oz., with an average Babcock test of 4.27 per cent. of fat, 533 lbs. 12 oz. of butter fat, the equivalent by adding one-fifth to the test, of 652 lbs. 8 oz. of butter. She dropped a solid colored bull calf Jan. 27, 1898.

FARM produce should be steadily marketed. Study the catalogues and order seeds and nursery stock early. Dealers are likely to fill early orders with greater care. The early hot-bed should be started the last of the month.

If some milk farmers would sell off their poorest cows and ship only the product of their best cows the milk surplus would be reduced and the farmers who did the weeding out would make more money.



ONEIDA 42,100,
Owned at Hood Farm, Lowell, Mass.

N. E. Milk Producers' Union.

A committee of the board of directors of the New England Milk Producers' Union met the contractors at the office of C. Brigham & Co., in Boston, Mass., on Saturday, Feb. 19, in relation to an allowance for the skim milk sold, inasmuch as the producers were now carrying the entire surplus.

At the meeting of the above parties on Feb. 5th to fix the price for the surplus, the skim milk question came up, and the contractors claimed that the new officers did not understand the conditions of the trade made, and that the old officers should be consulted in order that the matter might be better understood. The old officers were appealed to and the following statement which was published in the New England Farmer of Feb. 12th, was their understanding of the matter:

"The directors claimed that the contractors should account to the union for sales of skim milk now that they pay full price for none of the surplus. The contractors fell back on the narrow letter of the trade which was that they should pay for surplus milk its butter value. The contractors completely ignored what they have frequently admitted heretofore, that the intent of the trade was that they should account to the farmers for any commercial value that there might be in the surplus milk regardless of how it is got. In years past butter has been the only income from it, and so the trade has allowed only to butter, but the contractors are morally bound to account to the farmers for the sales of skim milk, particularly in view of the fact that at the present time they do not pay full price for any of the surplus."

It was confidently expected that both ex-President Gleason and ex-Secretary Whitaker of the New England Milk Producers' Union would be present at the conference, as they were urged by requested to be there, but they were not. After a protracted discussion of the subject, matters were left in the same unsettled condition as before, which might not have been the case if all the parties had been present.

In justice to Messrs. Whitaker and Whitaker it should be stated that Mr. Gleason was not present owing to a previous business engagement which precluded his attending, and he expected that Mr. Whitaker would be present who understood the situation as fully as he did. Mr. Whitaker wrote a letter Feb. 18 to the secretary of the union, stating that his position in the matter might be misconstrued if he should attend and take part at the meeting of the present board of directors and the contractors, and that it would be in better taste for him to keep away from the meeting. Owing to the letter being misdirected it failed to arrive in season for explanation to be made and Mr. Whitaker's attendance secured.

The contractors claimed that the trade was made that only 2 1/2 per cent. of the surplus should be carried during the six months from Oct. 1st, 1897, to April 1st, 1898, and they could not see the difference between carrying 2 1/2 per cent. for the entire six months or carrying 5 per cent. for three months, as the result would be practically the same and entitle them to all there was in the skim milk. In fact, they could

study our injurious insects with renewed vigor. The result is that the so-called 'remedies' now recommended are more often based upon a more scientific and rational knowledge of the insect and horticultural conditions than previously. The more progressive horticulturists now realize that the science of spraying has come to stay.

"Climatic and other unknown conditions often cause a considerable variation in the habit and life of an insect. The same insect may pass through but one generation in one locality, while in another state perhaps only one or two hundred miles away, it may be double-brooded. It may lay its eggs on the fruit in one state and on the adjacent leaves in another. Oftentimes a successful method of fighting an injurious insect depends upon some apparently trifling habit which may be easily overlooked. My experience in studying the habits of insects during the past few years has led me to believe that there is much to be learned about those insects that we have thought we knew all about.

THE CODLING MOTH.

"Recent additions to our knowledge of that old and familiar pest, the codling-moth, illustrate most of the facts above mentioned. If there is any one of our common insect pests about which we have thought that there was little new to be learned it is the codling-moth. There was scarcely any change in our stereotyped biography of this pest for half a century or more previous to the present decade. In 1878 a practical fruit grower accidentally discovered that when he sprayed his trees with Paris green, he, not only rid the orchard of canker-worms, but that the apples on the sprayed part were much less eaten by codling-moths. It was proved that one could kill a large percentage of the apple-worms by applying a poison spray just after the blossoms fall. This was soon demonstrated by many experimenters; the late Professor Lodenman satisfied himself that often at least seventy per cent. of the apples that would be rained by the worms could be saved by spraying. He could not see just how it was accomplished, and often appealed to me for an explanation. I could find no definite observations recorded upon the habits of the newly hatched worms; and it was only quite recently that anyone had ever seen the eggs of the codling-moth. My studies have resulted in some new notions about the habits of the insect.

"He said, in part:

"For many centuries the insect world has afforded one of the most fascinating of all fields for observation by those who speculate upon the various phases of that mysterious something called life which has been discovered.

"In the under side of each front wing of the male, only there is a narrow, elongated, blackish spot. This one can usually determine the sex of a codling-moth at a glance by the presence or absence of these black markings.

"It is about the egg and the habits of the newly hatched worm that the most new light has been shed by recent investigations. The usual stereotyped statement as taken from our leading textbooks on entomology, has been 'The moth lays its eggs singly in the maturing blossom of the apple just as the petals fall. As soon as the caterpillar hatches it burrows into the apple.' I have now learned that the eggs are thin, oval, scale-like objects, not quite as large as the head of a pin, resembling a minute drop of milk; instead of being on or in the calyx they are on the fruit near the calyx in old curlicio scars, near the stem, or even on the leaves of the tree. Thus the commonly accepted

"In short, the study of insect life which has come to be known as economic of applied entomology, is scarcely a century old.

ENTOMOLOGY IN AMERICA.

"In America nearly everything relating to insects has been published since the Revolution. In 1841 Dr. Harris's 'Treatise on the Insects of Massachusetts' was published. This simply, concisely, yet beautifully written account of what the author had seen and learned about insects, justly entitles him to be called the 'Father of American Economic Entomology,' and the science of modern entomology may well be said to have had its birth in America with the publication of this noteworthy volume by the State of Massachusetts.

"Inquiries from such horticulturists as have studied the injurious insects have stimulated workers in entomology

first meals in the blossom end. As nearly eighty per cent. enter here when we spray, soon after the blossoms fall, we deposit some arsenic in the calyx-cavity, where Nature kindly takes care of it for us by closing up the calyx lobes, until ten days or two weeks later, when the little apple-worm includes it in the menu of his first few meals. We can thus hope to reach with a poison spray only those apple-worms which enter the blossom ends of the forming fruits in the spring. To do this the application must be made soon after the blossoms fall, when the calyx is open. I can conceive of no possible way in which a majority of the 15 or 20 per cent. of the worms enter the fruit at some other point in the spring and all the worms of the subsequent broods can be effectively reached with a poison spray. The falling of the blossoms is the signal to begin spraying; the closing of the calyx lobes, a week or two later, is the signal to stop.

"Another and familiar insect pest which has received considerable attention at the insectary of the Cornell Experiment Station is the peach-borer. It is an American insect, and for more than a hundred years it has been recognized as a very serious obstacle to the growing of peaches in this country.

"Almost everyone who has grown this luscious fruit is only too familiar with the telltale gummy mass found around the base of peach trees in which the grub-like caterpillar of this pest is at work.

"The life history and habits of the insect were fairly well known to the earlier writers. In the latitude of New York the borers mature late in June; they spin a cocoon of silk and particles of bark near the entrance of their burrows. The females, soon after hatching, begin to lay their eggs on the bark of the peach trees. The caterpillars hatch in from seven to ten days, and at once begin their destructive work under the bark, at or below the surface of the ground. They continue to work until cold weather sets in, when they enclose themselves in a loose cocoon, like home near the surface of the soil, and there remain all winter without feeding. This winter habit seems to have been only recently observed. In May they begin to work again, and do the most damage in June.

"After three years' careful tests of all the substances which gave promise of being effective against the borer at the Cornell Experiment Station, twenty-one different things were tried. The following were ineffectual: Carbon bisulphide assafetida and aloes, lime salt and sulphur wash, resin wash (two applications), strong solution of hard soap, Hale's wash (two applications), tallow, which formed a thick and complete coating lasting until the next year, tansey grown around the base of the trees, whale oil soap (two applications), whitewash, paint made with lime and linseed oil, and wire gauze protector, which should be theoretically a perfect and mechanical protector.

"Six substances tried proved partially effective; of these two might be termed mechanical, the old 'moulding system,' and tarred roofing paper carefully tied around the base and extending below the ground; this seemed to protect against two-thirds of the borers. White paint kept out from one-third to one-half of the insects. White paint and paris green killed many of the young trees. Coal tar was very effective, only a few borers succeeding in getting started in trees brushed with it, and it did no injury to the trees. The following proved sure death to the trees: Paris green mixed with glue, raupenlein (German caterpillar lime), and dendrolene.

"Nothing was found which would keep all the borers out and not injure the trees. A wash which has to be applied more than once a year will not pay, for one can dig out borers quicker. The 'digging out' process is certainly the surest yet devised, and can be done with about as little expenditure of time and money as it will take to apply washes or mechanical contrivances thoroughly enough to keep the borers out. Although we did not accomplish our ideal, the experiment did demonstrate what is often equally valuable and important to know, that is, to know what not to do."

THE APPLE WORM.

How to Have Plenty of Fruit.

There is hardly one farmer in fifty that has a full supply of fruit for his family during the year, including small fruits, and yet there can scarcely be any excuse except negligence in providing them. Perhaps there is not one in ten, says a writer in *Coleman's Rural World*, that has a full succession of apples, peaches, pears, plums, grapes, etc.

There are generally some farmers who feel satisfied in saying that they can buy small fruits and vegetables cheaper than they can afford to raise them; but the poor wife knows about how much is bought, the amount depending too often her own scant supply of pocket money. Now, does any of this strike you? If it does, this winter is a good time to plan and arrange to have such things. Go to work in earnest, make out a bill of what you need set out a few strawberries, currants, gooseberries, blackberries, raspberries, grapes, rhubarb, etc., etc., this coming spring. Have you a few worthless trees such as apple, peach, pear, etc., or trees whose fruit is not satisfactory or not prolific enough? You can change them by grafting or budding; you can make a worthless tree become one of profit and delight. Grafting is usually considered the better way, as we gain time. Suppose you wish to introduce new kinds of apples on trees already in bearing. Procure your scions, of desired variety, the latter part of winter while the buds are yet dormant, and stow them away in moist earth in a cool cellar, there to remain until ready for use. When spring comes, the air warms up and the buds on the trees begin to swell, then you may proceed to graft. The limb to be grafted should be cut off smoothly, a slit made through the centre with a sharp knife and the wedged shape scion inserted. There is not much to do with the scion, except to cut it, to allow of as many as two sound buds. The scion need not be as large as the stock—seldom so large; but the bark on one side should be even. Often when the scion is inserted the spring of the stock is sufficient to hold it in place; but to make sure of it you had better tie with a string. The parts in contact should be waxed over to exclude air and moisture. A good grafting wax is made as follows: Take six pounds of resin, two pounds of beeswax and one pound of tallow; melt together and apply warm with a brush. Budding is done in the following manner: Procure some good buds of variety wanted, from strong, well ripened shoots of this season's growth. With a sharp knife make a T shape cut in a strong, young shoot of this year's growth; commence at the upper of cut and gently force the bud into place. See that all fits snugly, then put on the wax and tie with a narrow strip of cloth or string to hold parts firmly and to exclude air—when the young bud starts to grow, which is usually from four to six weeks, the bandage should be removed, as it will not rot away as in root-grafting. The time to bud will depend somewhat on the season and the kind of trees budded, but the season is usually from July to September. The most of your success will depend on the sap, which should be flowing freely enough, in the latter part of summer to allow of lifting the bark without injuring the wood.

A Good Business Suggestion.

A friend says farmers ought to make an inventory once a year at least, so as to know whether they are gaining or losing. "I ask farmers," he writes, "how they are getting along, and nine out of ten will say they are losing money. But usually they don't know anything about it. If they would keep accounts they might find they were doing better than they thought for. In many cases it might start them to looking up the cases and stopping them. I am sixty-five years old and not able to do hard work. Owning a small farm I determined to rent it and live in town. For two years it was managed by a tenant and I lost money. How do I know? Because I took an inventory and kept account. I then hired a man and gave him a good chance on shares, but reserved the right to manage the farm operations. I kept a horse, and drove back and forth when weather was favorable. Last year we cleared over \$500, and my hired man laid up from \$150 to \$200. You ask how I know? Because I have taken my inventory.

Since I have been unable to do hard work, by reading the papers and studying, I find that I can manage a farm more successfully than when I used to do all by main strength and ignorance. The trouble with my first renting was that I turned over our farm, with forty years of experience, to a young man of very limited experience, although he thought himself an expert."

The above is condensed from a long and valuable letter from one of our many friends. And it has some good points in it. Every man ought to know once a year or often how he is doing from exact accounts, as nearly as possible. I can take our books at home and show you just what we have gained every year since we had any-

thing. I know this keeping accounts has encouraged us to stop leaks and study to reduce the cost of production. I asked a farmer friend once how much it cost him to live. He replied: "I don't know, and I don't want to know. I don't care as long as I have money in my pockets to buy what I want."

This isn't the way we do. We know our farming pays, and it encourages us. Our friends think the bottom is all out of farming generally. And it seems to me an excellent plan for farmer when he gets along in years to keep the general management of his farm in his own hands. Don't move to town and throw away that thirty or forty years of experience and lose health and all interest in life, perhaps, sitting around with nothing particular to do. Turn over the hard work to younger hands, but keep enough to do to give zest to life and sound sleep and good health. There is good sense in a retired city business man moving into the country, but why should an old farmer move to town? Why not fix up his farm home and make life there as an enjoyment as possible, "near to nature's heart."—Practical Farmer.

Foods and Feeding.

In a previous article the importance of high feeding of cows well selected was emphasized. The subject matter that follows in logical sequence is probably that of the foods best adapted to secure free consumption. It is now freely assumed, both by men of science and men of practice, that these foods must bear such relation to each other that a given amount of protein and carbohydrates must be daily fed. It was my fortune, first of anyone by a few years, to put to the test in this continent, this theory borrowed from Germany. That years of trials in this direction led to a materially modified acceptance of nutritive ration, as laid down, is not very important to dairymen, even though fully verified, for it appears to me that the dairy cow requires nearer the amount of protein claimed by Wolff than other animals do; while at the same time she takes from the farm more nitrogen, that may be returned by a highly nitrogenous food, than do these animals. If then, perchance, the cow gets more nitrogen, as protein, than she needs, it is a fault in the defects in corrugated iron if they not be forgotten though, in the great alfalfa region where corn does not thrive and the by-products of wheat abound, and also in the cotton belt, that the proposition should be turned squarely around, and advised given to see to it that plenty of easily digested carbohydrates are fed. Feeders of these sections have been misled by the emphasis laid on protein.

There is one feature of the question of protein in the ration that I desire to dwell upon, though it carry my subject into another issue, this is the relation of protein foods to farm fertility. The familiar tables that show that the relative fertilizing value of bran is about twice that of corn, and of cotton seed meal more than twice that of bran, derive these differences mainly from the differing nitrogen content of the foods. Thus a ton of corn contains 36.4 pounds nitrogen, a ton of bran 53.4 pounds nitrogen, a ton of cotton seed meal 135.8 pounds nitrogen, and a ton of gluten meal 100.6 pounds nitrogen, timothy hay 25.2 pounds nitrogen. At fifteen cents a pound for nitrogen the foregoing foods would in this material have in the rations given above a relative value of \$5.46, \$8.01, \$20.37, \$15.09, \$3.78 as fertilizers. This price is substantially that given by stations for the guidance of purchasers of chemical fertilizers. The points to which I would especially invite attention are: First, that the foods derive, as stated, their chief theoretical fertilizing value from their nitrogen, not being distinguished for their phosphoric acid and potash. Their use either direct or through their manures is the use of nitrogen. Is this philosophical and practical? No, because crops gather from natural sources—a larger ratio than ordinarily they can of the two minerals named. As it requires all three of these materials to lift the crop yield materially, it is unwise to invest heavily in the material that costs most and is least required. This mistake is made, and a glaring one it is when viewed from the facts that the nitrogen is peculiarly subject to loss in the soil from leaching, in the form of nitric acid, and from loss by fermentation, or, as formerly known, by oxidation, passing into the atmosphere. Prof. Snyder's very valuable contribution to the literature of fertilization and tillage shows for Minnesota soils a startling loss of nitrogen in these directions under tillage. But potash and phosphoric acid are easily held by soils, suffering in practice but little loss. It is customary in New England to apply forty to fifty tons of manure to the acre, or when the manure is made from rich foods 500 pounds or more of nitrogen, where not one-tenth of it will be used for the first crop.

It is evident that we can press too far the manurial value of foods in making

our purchases, unless advice and practices, other than those in vogue, interpose as counterpoise. In personal farming I apply very light coatings of manure, thus supplying the annual necessities of crops for nitrogen, adjusting my farming otherwise for the mineral supply, or for the potash and phosphoric acid. This question has bearings in many directions. The broad principle is all that I desire to approach. That principle seems to me clearer and beyond reproach. In application it means a correcting less than a superficial glance at tables of analyses which indicate the manurial value of foods, or the wiser use of yard manure, made rich in nitrogen by purchased protein foods.

Without desiring to belittle protein we may, I think, safely ascribe to fat of foods the highest value among the nutrients. Foods are the source of energy for the work done by an animal whatever the character of that work, be it milk production, exercise, flesh building or heating. A pound of fat will do more work than a pound of any other constituent of foods. As expressed by physiologists, it has twice and a half the heat units, and will lift twice and a half the foot pounds that carbohydrates or protein will. I look at the fat contents of foods the first of all when buying solely for food value. Protein is always viewed with especial interest, as far as recuperation is the great work in hand. Its presence is not without its effects in the milk pail. But what foods and how estimate their value?—J. W. Sanborn, in Hoard's *Dairyman*.

Practical and Scientific Facts About Iron Roofing.

During the past six months I have noticed many articles in the different trade journals, relative to metal roofs as a covering for barns, residences and store houses, but none instructing the inexperienced how to make an intelligent selection, suited to their particular building, from the various different devices now manufactured. Corrugated iron has probably been used more than any other device, and I will venture to say that not one corrugated roof in twenty has given entire satisfaction, and than do these animals. If then, perchance, the cow gets more nitrogen, as protein, than she needs, it is a fault in the right side and in a safe side. It must not be forgotten though, in the great alfalfa region where corn does not thrive and the by-products of wheat abound, and also in the cotton belt, that the proposition should be turned squarely around, and advised given to see to it that plenty of easily digested carbohydrates are fed. Feeders of these sections have been misled by the emphasis laid on protein.

There is one feature of the question of protein in the ration that I desire to dwell upon, though it carry my subject into another issue, this is the relation of protein foods to farm fertility. The familiar tables that show that the relative fertilizing value of bran is about twice that of corn, and of cotton seed meal more than twice that of bran, derive these differences mainly from the differing nitrogen content of the foods. Thus a ton of corn contains 36.4 pounds nitrogen, a ton of bran 53.4 pounds nitrogen, a ton of cotton seed meal 135.8 pounds nitrogen, and a ton of gluten meal 100.6 pounds nitrogen, timothy hay 25.2 pounds nitrogen.

At fifteen cents a pound for nitrogen the foregoing foods would in this material have in the rations given above a relative value of \$5.46, \$8.01, \$20.37, \$15.09, \$3.78 as fertilizers. This price is substantially that given by stations for the guidance of purchasers of chemical fertilizers. The points to which I would especially invite attention are: First, that the foods derive, as stated, their chief theoretical fertilizing value from their nitrogen, not being distinguished for their phosphoric acid and potash. Their use either direct or through their manures is the use of nitrogen. Is this philosophical and practical? No, because crops gather from natural sources—a larger ratio than ordinarily they can of the two minerals named. As it requires all three of these materials to lift the crop yield materially, it is unwise to invest heavily in the material that costs most and is least required. This mistake is made, and a glaring one it is when viewed from the facts that the nitrogen is peculiarly subject to loss in the soil from leaching, in the form of nitric acid, and from loss by fermentation, or, as formerly known, by oxidation, passing into the atmosphere. Prof. Snyder's very valuable contribution to the literature of fertilization and tillage shows for Minnesota soils a startling loss of nitrogen in these directions under tillage. But potash and phosphoric acid are easily held by soils, suffering in practice but little loss. It is customary in New England to apply forty to fifty tons of manure to the acre, or when the manure is made from rich foods 500 pounds or more of nitrogen, where not one-tenth of it will be used for the first crop.

It is evident that we can press too far the manurial value of foods in making

the durability of an iron or steel roof depends on the paint; that is, I always advise close sheathing (if a barn), well ventilated, then put paper between the sheathing boards and the iron. This will keep the roof from sweating (or prevent condensation), make the building warmer in winter, and to a certain extent, counteract the effect of the sun's rays during the summer months. In other words, the paper protects the under side that you can't reach after the sheets will have been laid. Now, if you keep the exterior well painted and free from rust, the roof must last indefinitely.

I learn through many consumers that great difficulty has been experienced in making close or watertight connections (when using iron roofing) with cupolas, chimneys and like places. To all such, I will say that it is one of the simplest problems to overcome in the roofing business, but to explain would require too much valuable space. There is probably one more objection to iron roofing that I have often heard, viz: "it ripples" and the cause for this lies in the fact that the space between the standing seams is too great to be squeezed up with roofing tongs, being two feet from center to center. This trouble can easily be overcome by a center crimp, thus making the seam

twelve inches from center to center, instead of twenty-four. The root would be laid the same as the wide crimp. The above device would apply only to a surface with one-third, and not less than one-fourth pitch. For a very flat surface, other devices now on the market would have to be used. In conclusion, iron or steel certainly has more merit than any other on the market, and we are sure it would be more extensively used, if less mistakes were made when laying.—Practical Farmer.

Hired Help on the Farm.

The hired man is a necessary factor on every successful farm. Excepting where the farmer has the help within his own family, the hired man becomes a necessity in order to make the business a success. The difficulty, however, that confronts the farmer who is compelled to have hired help on the farm, is that this hired help breaks in on the home life. The majority of hired men on the farm are unmarried, and, consequently, they have to live with the farmer. This, to a certain extent, is objectionable, especially where there is a family of young boys growing up, as very often the moral character of the hired man is not such as would be conducive to a healthy growth of morals in the young boy.

One way to overcome this drawback is for every farmer to have an extra house on the farm for hired help. A comfortable house can be built very reasonably, and life on the farm would be better for all concerned, if the hired help lived in a separate house. It would then be necessary to engage married men, who would require higher wages. This would not be a drawback, as there is no one who renders as good service for the money he gets as the married hired man on the farm. The very fact that he is married and has some one depending upon him, makes him more steady and his service of more value to the farmer.

The difficulty with the single hired man very often is that he is too much inclined to roam around at nights, and thus unfit himself for work the next day. Of course, no one objects to a reasonable amount of recreation, which every one should have. But the hired man's first duty is to serve his employer faithfully and well. Then, again, very often if the hired man, who is boarding with the farmer, is not treated as one of the family, and consulted in regard to the business of the farm, he is dissatisfied. In taking this view we are not disparaging the hired man's calling in any way, but just discussing the question as far as it bears on the farmer's home life on the farm. A hired man on a farm should not take it as in any way disrespectful to himself because he is not admitted to the inner home life, or is not allowed the privileges of the members of the family.

And then there is the question of extra work for the women folk on the farm because of the hired man in the home. The extra wages that it is necessary to pay the married man to board himself, will be more than made up by lessening the labor in the farm home, and by the better home life the farmer and his family will have. Of course, a hired man with a family would need steady employment all the year round, and this would be an advantage to the farmer. Where a large amount of stock is kept there is just as much need of help during the winter months as during the summer.—Farming.

America's Greatest Medicine

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GREATEST. Because Hood's Sarsaparilla is the medicine to which the bulk of the people naturally turn when overtaken by sickness, caused by impure blood, scrofula, dyspepsia, etc., or when recovering from debilitating blood-poisoning diseases like diphtheria, scarlet fever, etc.

GREATEST. Because of the vast number of testimonials which come from every city and hamlet in the land, telling of marvelous cures and over-flowing with gratitude.

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GREATEST. Because unequalled by any other medicine for supplying the nerves with pure, rich, nourishing blood, and thus curing nervousness, neuralgia and nervous prostration.

GREATEST. Because of economy and strength, Hood's Sarsaparilla being the only medicine of which it can truly be said, "100 doses one dollar."

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COLUMBIA FLEXIBLE AND REVERSIBLE DISC HARROWS, **COLUMBIA INCLINED CORN HARVESTER AND BINDER,** **COLUMBIA MOWER, (1 & 2-horse),** **COLUMBIA REAPER, NO. 8 REAPER, ALL-STEEL TEDDERS,** **COMBINATION HARROWS,** **DISC DRAKES, ALL-STEEL DRAKES, AND DUMP RAKES,** **RIVAL DISC HARROWS,** **SULKY SPRING-TOOTH HARROWS,** **SPRING-TOOTH HARROWS,** **ADJUSTABLE PEG-TOOTH HARROWS,** **HOOFY HOGG FOR FARM AND HOUSEHOLD USE.**

THE Cut here Shown is that **Osborne Columbia Peg-Tooth Harrow.** We have made it a **Perfect Harrow and a complete implement.** It has no equal on the market. The frame, tooth beams and teeth are made from highly carbonized steel, and are light and strong, being able to bear any desired angle—forward to tear up hard, straight for all kinds of work, and to lay down to any angle, forward or backward, according to the wants of the farmer.

Especially desirable for harvesting heavy ground, as it cuts clean and smooth, and is self cleaning.

It is fully warranted and is the best of its class that can be produced with good material, complete equipment, superior skill and long experience.

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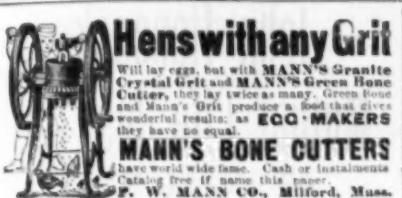
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POULTRY.

Lice and Mites.

The term hen lice as commonly used, includes a number of species. The most common in this section is the small pale species. The same treatment applies to them all.

The more successful poultry raisers have but little trouble from these insects. They believe in prevention which consists in reasonably clean houses, roosts cleaned out several times a week, if not daily, whitewashed walls and kerosene roosts. They seldom find other measures necessary, but when lice once get possession, severe measures are necessary. The term lice as here used includes the mites or "red spiders" which do not remain upon the fowl but feed upon them at night and hide in the cracks and crevices during the daytime. These mites are red only when filled with blood. They are sometimes very abundant, although each insect is no larger than a pin head.

Perhaps the best measure in case the lice get the upper hand is a thorough fumigation if the house can be made tight. Use bisulphide of carbon, which is simply allowed to evaporate from a dish until the house is completely filled with the fumes. It will do more thorough work than sulphur or tobacco. Of course the hens should be elsewhere at the time and the fumes should be allowed to stay in the house about twelve hours.

Chickens, turkeys, ducks and guineas kept in the same yard will be almost certain to end in failure and disappointment.

Where hens are moved from one place to another during the laying season, they will diminish laying, or perhaps stop for a while.

Select the breed you like best, take the proper care of them and depend upon it, they will take care of you.

Farmers who have a patch of wet land, marshy and almost useless, could get a little return from it by keeping geese. A few would get most of their summer food from such a spot and will pay better in proportion to their cost than any other stock on the farm.

The Minorca-Langshan cross gives a good fowl for winter egg production. The eggs are large, there are lots of them and the hens are as bright, lively and vigorous as one could wish for. A cross which gives a smaller but richer colored egg and a better fowl for market is the White Leghorn-White Wyandotte. This latter cross may some day be bred and selected until it is made a perfect breed for laying what is wanted, a Leghorn with a dark-shelled egg.

I would not advise one to leave a good trade to follow the poultry business, but would insist on keeping a few fowls in connection with your vocation. It is surprising on what a small place a few hens can be kept and lay eggs every day. I once kept a rooster and a few hens in a pen 6x19 during the spring months, and they laid well; the eggs also hatched well. They were given a variety of food, a little at a time and often, in one-half foot of chaff and straw, where they were compelled to work for it.

MASSACHUSETTS PLOUGHMAN BOSTON, MASS., SATURDAY, FEBRUARY 26, 1898.

APIARY.

Planting for Honey.

Question.—What is the best kind of tree to plant for bees? I am thinking of planting quite a large number this spring, if I can find out what will be best.

Answer.—The matter depends very largely on where the person lives who wishes to plant trees for honey. In all northern localities there is no tree that gives as great a yield of honey as the linden (or basswood, as it is more familiarly known); and were I north of latitude forty, that would be the tree I would plant, were I to plant any exclusively for honey. This tree is also very valuable for lumber; but unless planted too closely to do the best for honey, a number of little account could be gotten from it on account of its growing so low and branching.

For fruit and honey combined, there is probably nothing better than the apple. Some years, when the weather is just right during its blossoming, it will yield honey nearly if not quite equal to basswood as to quantity, and in quantity is second only to white clover and basswood, if allowed to stay on the bine for a month or two, or if kept in a warm dry room for two or three months till thoroughly thickened and ripened.

Then the apple blossoms at a time when a little stimulation in the shape of nectar from the fields is of the greatest value to the apiarist in populating his hives with brood, which will arrive on the stage of action just in time to take advantage of the honey-flow from white clover and basswood, which makes the honey which does come from it of double value. So if I were to plant trees for honey I would include the apple as one of those trees, as it possesses the advantages of giving a good honey, giving said honey just at a time when it is of the greatest benefit to the apiarist, and gives, in addition, a kind of fruit that is desired by everybody, to eat out of the hand, and for cooking purposes, and which always commands a ready price in any market of the world.

Ten I would plant of basswood, with which will arrive on the stage of action just in time to take advantage of the honey-flow from white clover and basswood, which makes the honey which does come from it of double value. So if I were to plant trees for honey I would include the apple as one of those trees, as it possesses the advantages of giving a good honey, giving said honey just at a time when it is of the greatest benefit to the apiarist, and gives, in addition, a kind of fruit that is desired by everybody, to eat out of the hand, and for cooking purposes, and which always commands a ready price in any market of the world.

Now, let us contemplate a better and more philosophical mode of pruning. Here is a point of immense importance which only a few persons understand.

Every fruit tree (if it is a generous producer of fruit) will send out fruit-spurs on the sides of all the limbs and small branches, covering the sides and upper surface with fruit-spurs and leaf spurs from the body of the tree to the extremity of the branches. These should never be removed; yet many owners of orchards, with saw or hatchet, clip off every fruit-spur from the main part of the large limbs and small branches, leaving only a denuded branch.

Fruit-spurs are small shoots only one or two inches long. These should not be cut off, nor jammed off with one's feet when he is plucking the fruit.

Fruit-spurs produce fruit-buds in one season for the crop of fruit the following season. Leaf-buds may appear one year and the following season they will produce fruit buds, and the succeeding season the fruit-buds will yield fruit.

Dame Nature is a scientific philosopher. She would cover all the large branches with leaf-buds or fruit-buds and leaves, for the purpose of protecting the bare branches from the scalding heat of the summer's sunshine. That is one point of transcendent importance to be remembered by every one who owns a fruit tree of any sort.

Still another consideration should be well remembered. When the fruit-spurs of any tree are replete with fruit, the crop will not be half so liable to be shaken off by furious winds, as is the case when the fruit grows at the extremity of long and swaying limbs.

Most cherry trees will produce fruit-buds in abundance on every limb and branch if they are not cut off, or jammed off by the reckless feet of people who pluck the fruit. Thoughtless pickers will often claw off a large cluster of cherries and take also the fruit-buds, thus destroying the crop of fruit for the next season. Such pruning of fruit trees is always very damaging to the fruit productivity and to the growth of any fruit tree. We have only one large cherry tree, the limbs and branches of which are well covered with fruit-spurs. No one is allowed to climb into that tree-top to pluck cherries until he or she is made to understand that the fruit-spurs must not be clawed off with the fruit. The branches of our apple and pear trees are well covered with fruit-spurs; and the spurs always yield a generous amount of fruit.

It is a wrong practice to prune away all the small branches, twigs, fruit buds and leaf buds from the interior of a tree-top, making it like the interior of a tent. The old stereotyped rule is to cut away the interior of a tree-top so as to let in the sunshine and air. There is no sound reasoning in such direction for pruning trees. The foliage at the extremities of the branches will exclude all direct sunshine. Fresh air and wind will sweep through a tree-top, even when the top is so dense that a person cannot climb around among the branches.

Fruit trees require but little pruning.

Many need none at all. The fruit buds should not be removed at all. Every tree that needs pruning should be pruned when the superfluous branches are small. When the branches are allowed to grow ad libitum or at random until they are as large as a man's arm, it will be very damaging to the tree to cut off such large branches. If we examine any fruit trees and some ornamental trees, we can see at the point of articulation or junction of the limbs with the main stem, a sort of crease, or seam, or cicatrice extending around the base of each branch. That natural seam

indicates the better place for severing the limb from the main stem. If a branch is sawed off at that seam, the wound will always heal much sooner than if the kerf or cut was made on either side of it. I have directed the attention of many intelligent men to this important point; but not one of them had ever observed that but.

Wherever I go about the country or city or village I see many fruit trees and ornamental trees ruined by ignorant pruners, who saw off large branches several inches from the main stem; whereas, they should be severed at the seam indicated in the growth of the bark. My own practice has always been to keep a small kettle of grafting wax on hand, by melting a pound of resin with a pound of tallow, which is applied warm to the wounds with a small paint brush. If this proportion of resin and tallow should be too brittle, add a small quantity of linseed oil. Should the wax be too soft add more resin.

A Handy Rack for Hauling Ice.

Most farmers draw their ice in a sleigh or wagon box and sometimes find it awkward work loading and unloading the ice. Unless the blocks of ice are of the right size to fit into the box there is much room lost and the teams are either drawing light loads, or there is a lot of extra lifting to make up a good load. Then the ice is very hard on the box, and many a stout box has been broken while harvesting the ice crop.

The most convenient way of hauling ice is to make a wide platform rack on the sleigh. Make bolsters six feet long and put them in the place of the regular bolsters on the sleigh. Now put on a covering of twelve foot plank about two inches apart, and bolt them to the bolster.

Across the ends and along the sides bolt on a 2 4 scantling as a border to prevent the blocks of ice falling off. It will be much easier to load and unload ice on a platform like this and a much larger load can be drawn.

Cows, swine and poultry all need some kind of juicy, fresh food in winter to keep them in health and condition. Ensilage, beets, turnips, refuse apples and potatoes are what is wanted.



On the water in the moonlight A

more fitting scene for a story for young men to tell the story of his love and the young woman of his choice to share his life cannot be imagined.

The courtship of a young couple may be even more romantic than that of a married man and woman.

They are common sense considerations outside of love that have a world to do with the making of married happiness.

One of the most important of these is the care of the young couple by their parents to the sacred trust. The young man who is in the incipient stages of consumption commits a crime if he marries before he is restored to health. He condemns his wife to the life of a nurse and his children to a life of misery and disease.

Dr. Pierce's Golden

Discovery cures 98 per cent. of all

cases of consumption if taken in its earlier stages. This is its record established during the past 15 years. It is the great blood purifier, flesh builder, nerve-tonic and general restorative.

The young woman who suffers from weakness and disease of the delicate and important organs that make life possible is very unhappy. These are common sense considerations outside of love that have a world to do with the making of married happiness.

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The young man who is in the incipient stages



BOSTON, FEBRUARY 26, 1898.

Persons desiring a change in the address of their paper must state where the paper has been sent as well as the new direction.

MASS. PLOUGHMAN FARMERS' MEETING

Saturday, February 26, 1898, 10 A. M.

Essay by BENJ. P. WARE of Clifton, Mass. Subject, Taxation.

The next MASSACHUSETTS PLOUGHMAN Farmers' Meeting will be held at Wesleyan Hall, 36 Bromfield St., Saturday morning, February 26, 1898, beginning at ten o'clock. Mr. Benj. P. Ware of Clifton, Mass., will speak on Taxation.

In selecting subjects for our meetings, we have usually confined ourselves to those which have been strictly agricultural in their nature, relating more especially to the methods and principles of farming. The subject chosen for our next meeting is a slight departure from our usual practice, but it is one of much interest to the farmer, especially at this time, in view of the bill now before the legislature which, if passed, will greatly affect the farmers' interests. There has been much discussion on the subject, and there will doubtless be no lack of it at the meeting. The speaker, Mr. Ware, is well known to all agriculturists in this state, and he will speak from a wide knowledge of the subject, and what he will have to say will be worth listening to. Many who have studied the subject thoroughly will be present at the meeting, and all who are interested in it will be cordially welcomed.

SELLING hay is selling the farm by the cartload; better keep more stock.

THE COW that the farmers want is the one with ten months in a year record.

SOME hard thinking in winter will save considerable hard work in summer.

EARLY chicks, spring broilers, early-laying pullets, winter eggs—that is the way to make poultry pay.

Cow keeping is no bonanza, but the dairy may be counted on to do its full share in paying for the farm.

IT is worth while to raise calves on the farm for the satisfaction there is in a herd free from tricks and as tame as pet kittens.

A LANTERN lighted early in the morning is a good sign. It shows that the thrifty farmer is not contented with short days which the season allows, but is up and attending to the work in hand.

GOOD nature has a money value in a cow. See to it that the calves become good natured cows. Don't hang them on the head with a pall or let the dog worry them.

AN old and valued subscriber of the PLOUGHMAN, Mr. John Stearns of Newton Center, Mass., died at his home last week, aged 75 years. Mr. Stearns had been a subscriber to the PLOUGHMAN for fifty-five years.

SOME men who would never be good farmers of themselves have done fairly well by simply "doing as father did." Ruts are good things for a blind horse. It is well for some stupid sons that they had enterprising fathers.

IN winter and early spring the social side of farm life should be most active. Invite the neighbors to occasional social gatherings. Organize reading clubs among the young people. The children are after all the best crop of the farm.

THE last Farmer's Meeting was about the best on record. The hall was nearly filled and the discussion was good; the standing and character of the audience being like Mr. Ellis' milk—first class. Be on hand for the meeting this Saturday.

BY selecting the best milkers from almost any breed it is possible to get a strain of high milk producing power. But the most rapid progress will be made by beginning with a breed already famous for milk production and improving it by careful selection and judicious breeding. It is easiest to breed "with the grain" so to speak. That is to pursue still farther qualities for which a breed has begun to be noted.

THE tuberculosis scare and the talk about ventilation, pure air, etc., has driven some farmers to the opposite extreme. Exercise does not mean that the cow should be turned out to shiver two or three hours in the March wind, with humped back and bristling hair nor does pure air mean that the door should be left open to make a draft through the stanchions. There is a golden mean in such matters.

There is more Catarrh in this section of the Country than in others, and for the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease and prescribed local remedies, and by constantly failing to cure with local treatment, promoted the mineral oil and other cures which were to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, Ohio, is the only constitutional cure on the market. It is taken internally in small doses to the amount of one ounce to the day. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address, F. J. CHENEY & CO., Toledo, Ohio.

Sold by Druggists, 75¢.

CURRENT TOPICS.

The destruction of the U. S. battleship Maine in the harbor of Havana occupies a very large place in the news of the day and the investigation as to its cause is being carried on as rapidly as possible. The photographs taken of the vessel show the enormous power of the force which wrecked the ship and all kinds of stories are afloat concerning the reason for the disaster. Investigation was delayed until experienced divers could be obtained and the request made that Spanish divers should accompany the Americans was refused by the United States government. A naval board of inquiry has been appointed and began its investigations last Monday. \$200,000 has been appropriated for the purpose of raising the Maine and it is hoped that she will not prove a total loss.

The American government and the American people have shown themselves equal to the emergency which so suddenly presented itself. The first natural conclusion was that the Maine destruction was caused by Spanish treachery, yet the message sent by Captain Sigsbee, asking that "judgment should be suspended," proved to be the wise policy of both the administration and people. While the excitement has been intense and all news from the scene of disaster eagerly read, yet the feeling aroused has been controlled, every act of the administration has been wise and well considered as was necessary in such a delicate situation, and the American people have shown themselves able to wait quietly until the full facts of the case are known and to trust that those in authority will do all that is necessary to uphold and defend the nation's honor. The spirit shown is not unlike that advised by Washington, whose birthday the nation has so recently celebrated, when he said:—

"Be united. Be Americans. The name which belongs to you, in your national capacity, must exalt the just pride of patriotism more than any appellation derived from local discriminations. Let there be no sectionalism, no North, South, East or West; you are all dependent one on another, and should one in union. Beware of attacks, open or covert, on the Constitution. Beware of the baneful effects of party spirit and of the ruin to which its extremes must lead. Do not encourage party spirit, but use every effort to mitigate and assuage it. Keep the departments of government separate, promote education, cherish the public credit, avoid debt. Observe justice and good faith toward all nations; have neither passionate attachments to any; be independent politically of all. Be a nation, be Americans. And be true to yourselves."

China has at last arranged for a loan with Great Britain, and it is said that preliminary contracts have already been signed. This insures equal commercial rights for all nations in Chinese ports. The terms of this loan, to which France and Russia formally objected, are as follows: A loan of \$60,000,000 for fifty years, to be issued at par and to bear interest at only four per cent. This is probably the only loan, or offer of a loan, China has ever had at par, and certainly the only one at so low a rate of interest. It is stipulated that in consideration of the loan China shall do three things. The first is to open to all nations as treaty ports three additional cities, one in the north, one in the centre and one in the south of the empire. The only possible ground for objection to it is that one of the ports is in territory that Russia covets and another in a province that France hopes to secure, and, of course, the opening of such treaty ports would make those schemes of conquest less easy of execution. But such objection would be purely selfish, and would command no sympathy elsewhere in the world.

The second point is that China shall not alienate to any other Power any part of the Yang-tee-Kiang Valley. That valley is the central part of China, and for commercial purposes the best part of the whole empire. The third point is that Great Britain shall have the right to extend her Burmese railroad through the province of Yun-Yan, presumably to the upper reaches of the Yang-tee-Kiang River, which just touches the farther, or inner, border of that province. No demand for military occupation of the province is made, and the stipulation is moderation itself compared with the requirements of Russia in He-Lung-Tsian, Kirin and Lea-Tong.

Horticultural Hall has long been one of the landmarks of Boston, but for some years there has been much said in regard to the Horticultural Society making a change of some kind. The claim has been made that while the exhibitions have improved to a marked extent, the attendance and interest has diminished; that the rentals have decreased; that the noise of the rapidly increasing business of this section of the city is disturbing and that the valuable library of the society is poorly accommodated. For these and other reasons, it was thought by many that a change should be made and three plans were proposed. The first was that the society should dispose of the property, which is worth about \$500,000, and move away. The second that it should tear down the old building and erect a skyscraping office building with quarters for the society therein. The third proposition was that the society tear down the old building, erect a new, high office building, but at the same time utilize it only for revenue and build a new home for itself elsewhere.

Of the three plans the first was more favored by those who desired a change and the radical elements of the society believed that if land in the Back Bay district, which could be obtained at a favor-

able figure at this time were purchased and a new building erected thereon, it would greatly further the society's interests. The subject was brought up at a meeting of the society last Saturday and a lively discussion was had over the matter. The claim was made by the more conservative members that the attendance at the society's exhibitions and meetings would fall off if the location was changed and that the present one was much more convenient for the practical business men of the membership. Also, that the present holdings were increasing in value and would continue to. After much discussion, it was decided to make no change by a vote of 105 to 65.

For nearly a quarter of a century the name of Frances E. Willard has been closely associated with the temperance movement and kindred reforms, and her death last week removes one of the strongest and most effective workers in this cause that the century has known. Educational work claimed her attention until 1874, when she gave up her profession to become the corresponding secretary of the Woman's Christian Temperance Union and in 1879 became its president which office she held at the time of her death. The society is now regularly organized in every state and territory of the United States, and numbers about ten thousand local auxiliaries, with a following of from 200,000 to 300,000 women, whose badge is the white ribbon, and whose motto is "For God and Home and Native Land." Its work is divided into forty departments, with a superintendent—national, state and local—at the head of each, and is grouped under the heads of preventive, educational, evangelistic, social and legal work, besides the department of organization. It is the largest society ever founded and controlled exclusively by women. The headquarters are in Chicago where the society has established a Woman's Temperance Publication Association, which sent out in 1887 over 50,000,000 pages of temperance literature, and publishes five periodicals, besides leaflets, books, etc. It has also a lecture bureau, a National Temperance Hospital, and is building a temperance temple for the accommodation of its various departments. The scientific temperance education laws, now operative in twenty-two states and territories, were secured by the W. C. T. U. under the leadership of Mrs. Mary H. Burt of Boston.

In 1883 Miss Willard founded the World's Christian Temperance Union on the Constitution. Beware of the baneful effects of party spirit and of the ruin to which its extremes must lead. Do not encourage party spirit, but use every effort to mitigate and assuage it. Keep the departments of government separate, promote education, cherish the public credit, avoid debt. Observe justice and good faith toward all nations; have neither passionate attachments to any; be independent politically of all. Be a nation, be Americans. And be true to yourselves."

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How does the Sugar Trust like the idea of the beet sugar people eventually stopping all sugar imports. It would take away its occupation, would it not?

Yes; naturally. The trust has grown rich by importing raw sugars into the country and refining them, but each

when you take Hood's Pills. The big, old-fashioned, sugar-coated pills, which tear you all to pieces, are not in it with Hood's. Easy to take Hood's Pills and easy to operate, is true of Hood's Pills, which are up to date in every respect. Safe, certain and sure. All druggists, etc. C. I. Hood & Co., Lowell, Mass. The only pills to take with Hood's Sarsaparilla.

No Gripe
Hood's
Pills

Reports to the State Department from

SPRING NEEDS.

What Everybody Requires at This Season.

Some Things Are of the Utmost Importance to You.

This Will Tell You Just What You Most Need Now and How to Get It.

In the spring changes always take place in our systems which require attention. There is a tired, languid feeling, a depression, the digestive organs become deranged, the blood is bad causing the complexion to become effected and the person feels an inability to work.

At such a time a spring medicine is absolutely necessary, and Dr. Greene's Nervura blood and nerve remedy is the medicine you want. It will overcome all these conditions. It will invigorate the blood, regulate the digestive organs, clear the complexion and make you feel strong and well.

Mrs. Rachel Hovey, 104 Preble St., Portland, Me., says:

"I was completely prostrated from the effects of two paralytic shocks which attacked both sides of my body. A friend recommended me to try Dr. Greene's Nervura blood and nerve remedy as a remedy, and I bought a bottle in H. H. Hay's drug store on Middle St. I found so much relief from this bottle that I continued to take it with increasing good results, and am now much better than I ever expected to be again and give the credit it deserves to Dr. Greene's Nervura blood and nerve remedy for my recovery. I gladly give this testimonial to those other sufferers may be able to avail themselves of this excellent remedy."

You want health don't you? You want to get up in the morning and feel like doing a good day's work, do you not? And you want your children to feel strong and vigorous, don't you? Well, Dr. Greene's Nervura blood and nerve remedy will do all this.

It will give to you and your children perfect health and that is exactly what you want. It is the best spring medicine known. It was discovered by Dr. Greene, of 34 Temple Place, Boston, Mass., the most successful specialist in curing nervous and chronic diseases. He can be consulted free of charge, personally or by letter.

beet sugar factory will have its own refining plant attached, and thus the monopoly is at an end. Of course a change is not to come at once. It is going to be a comparatively slow process; the building up of sufficient factories to supply America with sugar, as it will take a large number of them and the cost of a plant is so great that it is a serious matter upon which to embark unless it is absolutely certain that the locality is capable of furnishing profitably beets. Capital, however, is taking hold eagerly. There are now eleven factories, I believe, in regular operation; there are about ten being actually constructed under contract, and the farmers and capitalists in at least thirty-five sections are holding meetings and discussing the advisability of such a move. I look to see a large increase in the beet sugar factory will have its own refining plant attached, and thus the monopoly is at an end. Of course a change is not to come at once. It is going to be a comparatively slow process; the building up of sufficient factories to supply America with sugar, as it will take a large number of them and the cost of a plant is so great that it is a serious matter upon which to embark unless it is absolutely certain that the locality is capable of furnishing profitably beets. Capital, however, is taking hold eagerly. There are now eleven factories, I believe, in regular operation; there are about ten being actually constructed under contract, and the farmers and capitalists in at least thirty-five sections are holding meetings and discussing the advisability of such a move. I look to see a large increase in the probability of their getting caught by late frosts. He reports the best test of this method to have been made at the Missouri Experiment Station, at Columbia. The white wash used was four parts of water, one part of skimmed milk, and enough freshly slacked lime to make as thick a wash as could be used with a spray nozzle on a force pump. The buds sprayed remained practically dormant until April, while unprotected buds swelled perceptibly during warm days late in February and early in March. Eighty per cent of the whitened buds passed the frost line safely while only twenty per cent of the unsprayed buds escaped frost killing. Whitened buds blossomed from three days to a week later than the unwhitened ones. On the scientific theory that white absorbs less heat than any of the colors, experiments were made with thermometers along this line. Thermometers were sprayed with material the color of the peach twigs; other thermometers were sprayed with whitewash. During sunny days the dark colored thermometers registered from ten to over twenty degrees higher than did those covered with the whitewash.

The Secretary has just returned from a flying trip through Florida made at the suggestion of the President, in order to place the Department of Agriculture more fully at the disposal of the people of that State in assisting them in every way possible. Mr. Wilson expresses himself as much pleased and interested in the growing industries of the State. Since the war in Cuba, rapid strides have been made in the cigar industry in Florida. It is said that 40,000 Cubans have emigrated from the island and have settled in Key West, Tampa and in the interior of the State, bringing with them their skill in the manufacture of cigars, and their knowledge of growing tobacco which to them. This has greatly stimulated the growth of the weed in the State. Tobacco is grown in Florida on the heavy hammock land. There are now eleven factories, I believe, in regular operation; there are about ten being actually constructed under contract, and the farmers and capitalists in at least thirty-five sections are holding meetings and discussing the advisability of such a move. I look to see a large increase in the probability of their getting caught by late frosts. He reports the best test of this method to have been made at the Missouri Experiment Station, at Columbia. The white wash used was four parts of water, one part of skimmed milk, and enough freshly slacked lime to make as thick a wash as could be used with a spray nozzle on a force pump. The buds sprayed remained practically dormant until April, while unprotected buds swelled perceptibly during warm days late in February and early in March. Eighty per cent of the whitened buds passed the frost line safely while only twenty per cent of the unsprayed buds escaped frost killing. Whitened buds blossomed from three days to a week later than the unwhitened ones. On the scientific theory that white absorbs less heat than any of the colors, experiments were made with thermometers along this line. Thermometers were sprayed with material the color of the peach twigs; other thermometers were sprayed with whitewash. During sunny days the dark colored thermometers registered from ten to over twenty degrees higher than did those covered with the whitewash.

Considerable attention is being attracted toward the case before the Attorney General of the Department, in order to place the Department of Agriculture more fully at the disposal of the people of that State in assisting them in every way possible. Mr. Wilson expresses himself as much pleased and interested in the growing industries of the State. Since the war in Cuba, rapid strides have been made in the cigar industry in Florida. It is said that 40,000 Cubans have emigrated from the island and have settled in Key West, Tampa and in the interior of the State, bringing with them their skill in the manufacture of cigars, and their knowledge of growing tobacco which to them. This has greatly stimulated the growth of the weed in the State. Tobacco is grown in Florida on the heavy hammock land. There are now eleven factories, I believe, in regular operation; there are about ten being actually constructed under contract, and the farmers and capitalists in at least thirty-five sections are holding meetings and discussing the advisability of such a move. I look to see a large increase in the probability of their getting caught by late frosts. He reports the best test of this method to have been made at the Missouri Experiment Station, at Columbia. The white wash used was four parts of water, one part of skimmed milk, and enough freshly slacked lime to make as thick a wash as could be used with a spray nozzle on a force pump. The buds sprayed remained practically dormant until April, while unprotected buds swelled perceptibly during warm days late in February and early in March. Eighty per cent of the whitened buds passed the frost line safely while only twenty per cent of the unsprayed buds escaped frost killing. Whitened buds blossomed from three days to a week later than the unwhitened ones. On the scientific theory that white absorbs less heat than any of the colors, experiments were made with thermometers along this line. Thermometers were sprayed with material the color of the peach twigs; other thermometers were sprayed with whitewash. During sunny days the dark colored thermometers registered from ten to over twenty degrees higher than did those covered with the whitewash.

Other catalogues are received from EDWARD GILBERT, Southwick, Mass., hardy ferns and flowers; S. D. WOODRUFF AND SONS, Orange, Conn., grown seeds; E. J. HILL, Olyphant, Pa., tenth annual strawberry catalogue; W. F. ALLEN, Hall's, Salisbury, Md., strawberry catalogue; HARRY N. HAMMOND, Decatur, Mich., "largest grower of seed potatoes and farm seeds in the world," who has 3,000 acres under cultivation, 575 in seed potato alone; SUNSET SEED & PLANT CO., San Francisco, Cal., California seeds; S. L. WATKINS, Grizzly Flats, Cal.; and BURRANK'S EXPERIMENT FARMS, Santa Rosa, Cal., a supplement to New Creations in Fruits and Flowers.

White Wyandotte Eggs, 13 for \$1.25.
Silver Wyandotte Eggs, 13 for \$2.00.
Cat. Free. * F. W. WELLS,
18 Wall St., Rochester, N. Y.

Switzerland indicate a spread in that country of the foot and mouth disease in cattle, and American importers are cautioned. The

MARKETS.

BOSTON LIVE STOCK MARKET

Cattle in moderate demand—Sheep as last quoted.—Hogs of best quality 1-8c lower.—Calf market especially active.—Milk cows in moderate sale—Good draft horses wanted.

Reported for Mass. Ploughman.

Week ending Feb. 23, 1898.

Amount of Stock at Market.

Cattle. Sheep. Hogs. Veal. This week, 3,510 8,447 70 36,115 784. Last week, 4,000 8,500 75,512 1318. One year ago, 7,694 9,990 117,280,033 988. Horse.....347

CATTLE AND SHEEP FROM SEVERAL STATES

Cattle. Sheep. Cattle. Sheep. Maine.....144 New York.....50 N. Hampshire.....97 380 Rhode Island.....50 Vermont.....58 Western.....3 058 8,067 Massachusetts.....151 Canada.....50

Total.....3,510 8,447

CATTLE AND SHEEP BY RAILROADS, ETC.

Cattle. Sheep. Cattle. Sheep. Pittsburgh.....2,874 7,997 Eastern.....169 Lowell.....44 B. & M.....52 B. & A.343 450 Foot-boats, 80 Total.....3,510 8,447

Values on Northern Cattle, etc.

Beef.—Per hundred pounds on total weight of side, tail and meat, extra, \$5 25 65 64; first quality, \$4 25 65 64; second quality, \$3 25 65 64; third quality, \$3 75 65 64; a few choice single pairs, \$6 00 65 64; some of the poorest, bulls, etc., \$3 00 65 64.

Veal.—Thin young cattle for farmers: yearlings, \$18 00 65 64; two-year-olds, \$12 62 23; three-year-olds, \$10 00 65 64.

Sheep.—Per pound, live weight, 2 1/2 c 3c 4c. Extra, \$4 00 65 64; a few choice single pairs, \$4 25 65 64; some of the poorest, bulls, etc., \$3 00 65 64.

Fat Hogs.—Per pound, 3 1/2 c 4 1/4 c, live weight, wholesale, ; retail, \$2 00 65 64; some dress, 50c.

Veal Calves.—\$60 130; hand steers, \$60 100, or more according to their value for beef.

Cows and Young Calves.—Fair quality, \$20 85; extra, \$40 64; fair milk cows, \$60 60; arrow and rye, \$12 62 23.

Stored.—Thin young cattle for farmers: yearlings, \$18 00 65 64; two-year-olds, \$12 62 23; three-year-olds, \$10 00 65 64.

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Veal Calves.—\$60 130; hand steers, \$60 100, or more according to their value for beef.

Cows and Young Calves.—Fair quality, \$20 85; extra, \$40 64; fair milk cows, \$60 60; arrow and rye, \$12 62 23.

Stored.—Thin young cattle for farmers: yearlings, \$18 00 65 64; two-year-olds, \$12 62 23; three-year-olds, \$10 00 65 64.

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THE HOUSEHOLD.

[For the Mass. Ploughman.]
ELEANOR'S PUSSIES.

BY MABELLE P. CLAPP.

The pussy willows, silvery and gray,
In a little heap on the bare floor lay,
While close beside them Eleanor sat
Struggling to hold a big gray cat.
"Oh, I, I, do listen! Eleanor and Bess
Want some pussies, and these are the eggs, I
guess.
I tored my frock climbing up in the tree,
And Bess is as tired as tired can be.
Now isn't on 'shamed,' with a little pout,
That you didn't sit still and hatch 'em out!"

HOW TEDDY PROVED HIMSELF A HERO.

"Washington's Birthday is coming soon. Can any of you tell me what day it is?" asked Miss Ray, the teacher.

One hand went up.

"When is it, Johnny?"

"Fourth o' July."

Twenty or more heads gave an eager, upward jerk at the thought of Fourth of July coming so soon, but dropped as Miss Ray said.

"No, it comes on the twenty-second of this month. Now, how many of you know anything of Washington?"

A great many hands were raised, some large, some small, some clean, some grimy.

"You may speak, Tommy."

"Please'm, he had a hatchet, and he"—

"Yes," said Miss Ray, with a smile; "but we will not mind about the hatchet now, for we all know that story from your readers."

All hands went down except one.

"Tell me what you know, Johnny."

"He wrote the Declaration of Independence, and he fought in the war 'long side o' Generals Sherman; and when the battle of Gettysburg was done, he was so tickled about it he rushed right up to the old liberty-bell, and rang it and rang it and rang it, till he cracked it right straight in two!"

"Stop, Johnny! You're little mistaken!"

"Oh, but I know it's so, Miss Ray, for my uncle was down to Washington a while ago, and he saw that very bell, and the very crack in it. They were takin' it to the big show at New Orleans, and it was all trimmed up with flowers, and there was bands playin' and the people hurried and stamp'd round and thrown up their hats. I tell you!"

When he had seated himself, Miss Ray gave a little sketch of the life and work of Washington, so simple that the youngest child in her school knew that every child should know the Father of his Country.

Then it was settled that his birthday should be celebrated in a becoming manner in the town hall, and the children rushed out with shouts of delight.

"Three cheers for Washington!"

They were given with a will. Branches were dragged down from the trees, and with leafless banners waving, they marched to the sound of tin-pail drums.

Teddy Barnes joined heartily in the fun, and then walked up the steep path through the woods to his home on the mountain. He had never mingled much with other boys until the last summer no school-house had been built far enough up the mountains for him to go. But a railroad had wound through the valley, and a little town had sprung up so fast that all the boys, and the grown folks, too, wanted to do whatever the rest of the world did.

"There's to be a celebration to the town hall on Washington's Birthday, grandmother. There's to be speakin' and singin' and things. I'm to be in it, if I can find a good piece."

"Dear—me! Teddy, I always knew you could do great things, if you only set to it."

"It's got to be something about the Father of his Country, you know!"

Grandmother took off her glasses and looked solemnly at him.

"Yes, yes, that means one of the Pilgrim Fathers, don't it. Now, Teddy, I know the very thing for you. 'The breaking waves dashed high,' you know."

Anything that grandmother said was law and gospel to Teddy, and he dutifully began learning the verses. But when his father came home, three days later, he shook his head.

"That won't do, Ted. It was more'n a hundred years after the landing of the Pilgrim Fathers when Washington fought for his country's freedom."

"I wouldn't mind that," said grandmother. "He was one of that sort, anyway. Freedom to worship God—don't you see, what's the use of freedom, if it isn't for that?"

"Well, le's hear you say it," said his father.

Teddy could repeat it well to himself, but stumbled dimly when he had any listeners.

"What'll you do when there's a whole crowd?" asked his father.

Teddy did not know. The more he thought of it, the more he knew he could face all the fire and sword Washington ever saw, more easily than the eyes he must brave on that evening.

"There's no hero-stuff in him!" exclaimed his father, as Teddy broke down for the twentieth time.

Miss Ray was dismayed over Teddy's selection, but his heart was set upon it, for his grandmother's sake, and she let him go on. He failed, of course, in rehearsing to her, but she hoped and believed he would do better when the time came.

"Do your best now—don't be afraid," whispered Miss Ray as Teddy's piece was called.

But every word went out of his head as he stood on the stage, and turned towards that crowd in the town hall. He cast his eyes wildly to one side as if to try to escape.

"I told you so!" whispered father, and grandmother groaned.

Teddy again fixed his eyes on the audience, this time with an earnest look which led his friends to hope he was bracing himself for a fine effort. But again his eyes wandered, and he suddenly dashed out of sight behind the curtain. There was a slight crash, a rattle of breaking glass, and Mr. School Inspector Crane stepped hastily up after Teddy.

A little stir went through the crowd, and people were getting anxious, when the next piece was announced in a loud voice:

"Crossing the Delaware."

This, then, was the end of Teddy's piece. Father was angry and said something about cowards, while grandmother cried.

The performance went on, finishing with "See the Conquering Hero Comes" given as well as could have been expected.

"Stop a minute! Wait, I say!" came a voice, as the people were leaving their seats.

Mr. Crane had not been seen since Teddy had disappeared, for the stage was built against one of the entry doors, and he had gone out that way. He now burst into the room leading Teddy. Both of Teddy's hands were rolled up in cotton.

"There's been a deal of talk about heroes to-night," cried Mr. Crane, "and I think it's a good time to show you one. None of you know that if it had not been for this bit of a chap, we might all have been!" he stopped and lowered his voice—"the merciful Lord only knows where!"

He laid a strong, kindly grasp on Teddy's arm as he went on, growing more excited with every word.

"Yes, folks, that's just so. When he went up to speak his piece he saw what none of the rest of us saw, a smouldering fire off in your corner—a candle fallen into a little heap o' trimmings and scraps. Did he sing out and give the alarm so' women and children might be trod under foot, or jump out of these second-story windows on to that solid ice down there? No, he didn't! Your real hero always keeps his wits about him. He jumped on to the fire, and jammed it up in his hands, and smashed it through the window. Yes, his hands are burned and cut, too, but I'd be proud of any boy of mine that could carry such scars as he will! Now, folks cheer for George Washington—hip! hip!"

"Hurrah! hurrah!! hurrah!!!"

"Three cheers for Teddy Barnes!"

And to the end of her life grandmother always assures people that the cheers for Teddy were as loud as those for the Father of their Country.

"You'd have said your piece like a man if it hadn't been for the fire, wouldn't you, Teddy?" she asked, as they went home.

"I don't know, gr'm'ther," he said, glad it could never now be known whether he would have said a word of it or not.

"What's a hero, any way?" asked Johnny Crane of his father. "Washington was a hero, and now everybody says Teddy Barnes' a hero, and they don't look a speck alike."

"A hero? Well, now,—" Mr. School Inspector Crane felt a great deal more than he was able to say on that subject.

"A hero? Why, I fancy it's a fellow, boy or man, that's bright enough to see when there's something to be done, and then does it." —Sydney Dayre in *Youth's Companion*.

Honoring the Flag.

When the American flag is flying in the playgrounds of a certain private school for boys, one notices that all the lads who approach it take off their hats. This pretty custom, that sends a thrill of silent applause through passers-by, grew out of the following incident:

During a general frolic one day a young and heedless student threw a stone through the waving stars and stripes.

"A hero? Well, now,—" Mr. School Inspector Crane felt a great deal more than he was able to say on that subject.

"A hero? Why, I fancy it's a fellow, boy or man, that's bright enough to see when there's something to be done, and then does it." —Sydney Dayre in *Youth's Companion*.

Tumor Expelled.

The best shirt-makers have sent out their patterns for the summer, and the e's little or no difference from last year's styles, says Harper's Bazaar. The sleeves are smaller, and there is perhaps a trifle less fulness in the front.

Yokes are made square or pointed in the back, as is most becoming. A plain band finishes the neck, so that either a turn-down or a high collar can be worn. The preference is as yet for the heavier wash materials, such as Madras and Judging from the samples of fancy white materials, the white shirts are to be as fashionable as they were last year. The thin materials are not among the new fabrics. When they are used they will be made up in the fitted and more fancy waists. The different shades of wood-color, a steel blue, and a pink are among the new shades. Then there are the checks and plaids, whose name is legion, but the different patterns of white and tan are easily the smartest. Among those that have yet been shown there is one style that must not be forgotten, of plain color—dark blue preferably—made with square or pointed yoke at the back, medium full front, and down the centre of the front a flat pleat edged on either side with a ruffle of sheer white linen. This is a pretty style, and looks very smart when worn with white leather belt and white linen collar, the blue and white combination being a perennial favorite for summer.

Hem-stitching reigns in pocket-handkerchiefdom, according to the same authority. This season is responsible for it, and it proves that fashion is not so black as she is painted, or she would not now and then see fit to be sensible. This does not mean that embroidery is not just as popular as ever, but it does mean that the scalloped and pointed edges, so difficult to launder and so invariably frayed and fringy after a few "doings up," are no longer in vogue.

All this year's handkerchiefs have a hem-stitched edge, no matter how narrow that edge may be, and no matter how elaborate may be the inner border of embroidery. This holds good even of the finest importations, costing \$25 and \$30 apiece. "It is yet too soon," says the dealer, "to predict with any certainty what the coming handkerchief will be, but indications are that hem-stitching has come to stay." The likeliest innovation is that the embroidery will extend to the hem, which will be a change and yet not infringe upon hem-stitching rights. The fashion is to be welcomed by all, for if the costly linen article cuts a sorry figure with its ragged scalloped edges, what can be said of the cheap cotton imitations in the same plight?

THE HOME CORNER.

FREE PATTERN.

By special arrangement with the BAZAR GLOVE-FITTING PATTERN CO., we are able to supply you at a low cost. It is acknowledged by every one that these patterns are the simplest, most economical and most reliable patterns published. They are economical, and our lady readers have been invariably pleased with them in the past. The coupon below must accompany each order, otherwise the pattern will cost the full price.

MASS. PLOUGHMAN COUPON.

Cut this out, fill in your name, address, number and size of pattern desired, and mail it to THE HOME CORNER, MASS. PLOUGHMAN, BOSTON, MASS.

Name _____

Address _____

No. of Pattern _____

Size _____

Enclose ten cents to pay expenses.



7269—Girl's Costume.

Various sanitariums and private hospitals are using the "salt rub," and it is becoming so popular that some Turkish bath establishments are advertising it as a special attraction, says Trained Motherhood. It is just as good for well people as for sick ones, is the most refreshing of all the baths and rubs ever invented, only excepting a dip in the sea itself, and is matchless in its effects upon the skin and complexion. With all these virtues, it is the simplest, most easily managed of all similar measures, and can be taken at home easily, and is just the thing for the older children, as it is very strengthening.

Put a few pounds of coarse salt—the coarsest you can get, sea-salt to preference—in an earthen jar and pour enough water on it to produce a sort of slush, but not enough to dissolve the salt. This should be taken up in handfuls and rubbed over the entire person. Of course, it is better to have it rubbed on by another person, but anyone in ordinary health can do it for herself or himself very satisfactorily. This being done, the next thing is a thorough douching of clear water, preferably cold, and a brisk rubbing with a dry towel.

The effect of elation, freshness and renewed life is felt almost immediately, and the satiny texture of the skin and increased clearness and brightness of the complexion swell the testimony in favor of the salt rub.

For young children it is best to drain off the salt and add two tablespoonsfuls of pure bay rum to a basin full of this salt water. Apply with a soft flannel and dry with a soft Turkish towel. Care should be taken that there is not too much salt in the water, as it may irritate the tender skins of some children.

The need of a simple method of keeping household accounts, says the editor of the Home Club in the Outlook, "is felt by every housekeeper who is methodical and finds system a relief. It would result, doubtless, in the making of a perfect account-book for housekeepers if a practical blank-book maker could see one hundred account-books of as many housekeepers, who, because no book is satisfactory to them, have evolved, each, a book to meet her individual needs. A book that has been accepted by several housekeepers is very simple. A good-sized blank-book well bound, is bought, with ruled pages—over one hundred. The left-hand page is ruled first. The first vertical line in ink is drawn about two inches from the edge of the leaf. The lines about the distance apart of the horizontal lines or rulings are drawn on this and the right-hand to about a corresponding distance from the edge of the left-hand page. At the top on the margin, write: 'Butcher,' 'Grocer,' 'Wages,' 'Rent,' 'Clothes,' 'Books,' 'Charities,' 'Church,' 'Club,' 'Carefare,' and every regular account that goes to make the sum total of expenses.

In the space at left-hand write day and date, in space at right hand the total amount spent each day. At the seventh line, across the page, leave space to write the total of expense for the week, or, if monthly accounts are kept, the space at the bottom of the page will hold the total of each column. Every other page, or the first blank page turned over, will hold the monthly statement of amount received, expended, and the balance. Miss Conroy, of Pratt Institute, is devising a household account book which doubtless will be peculiarly well adapted to this particular field of vexed and vexing financial problems."

The recipes for these four steamed puddings from Table Talk will be found excellent.

Fig Pudding.—One-half of a pound of flour, one-quarter of a pound of stale bread crumbled fine, three tablespoonsfuls of sugar, three tablespoonsfuls of butter, two eggs, three-quarters of a cupful of milk. Chop the figs fine, add the bread crumbs, sugar, beaten eggs, milk and butter, melted. Turn into a well-greased mould, cover and steam for three hours. Serve with liquid sauce.

Eggless Fruit Pudding.—One heaping cupful of bread crumbs, two cupfuls of flour, one cupful of finely chopped suet, one cupful of seeded raisins, one cupful of molasses, one cupful of sweet milk, one-half of a teaspoonful of salt, one teaspoonful of soda dissolved in a little hot water, one-half of a teaspoonful of cloves, one tea-

spoonful of cinnamon. Steam for four hours and serve with hard or soft sauce.

Prune Pudding.—Pick over and wash one pound of prunes, cover with fresh cold water and let soak over night. Cook slowly in a double boiler until tender; when cool take out the pits. Make a batter with one and one-half cupfuls of milk, three well-beaten eggs, one-quarter of a teaspoonful of salt, one tablespoonful of sugar and sufficient sifted flour to make a thick drop batter. Beat for a moment, add the prunes and two teaspoonsfuls of baking powder and steam in a well-greased mold for two hours and a half. Strain the prune juice, add sufficient water to make one pint. When boiling add one heaping teaspoonful of cornstarch dissolved in a little cold water. Stir until thick and smooth, add one-half of a cupful of sugar and cook slowly for ten minutes. Take from the fire and stir in one teaspoonful of butter.

Snow Balls.—Cream one-half of a cupful of butter, and one cupful of sugar and cream again. Add alternately one-half of a cupful of milk and two heaping cupfuls of flour. Add three teaspoonsfuls of baking powder, stir in lightly the stiffly beaten whites of four eggs, turn into buttered cups and steam for half an hour. Serve with strawberry sauce.

Rye Short Cake Toast.—Mix one cup flour, one cup rye flour, half a teaspoon salt, one tablespoon sugar, two level teaspoons baking powder. Add one tablespoon melted butter and milk enough, about one cup—to make a dough that can be kneaded and rolled. Mould it smooth, roll out quite thin, cut into rounds and bake quickly. While they are baking make one cup of white sauce with one cup hot cream or milk, one level tablespoon each butter and corn starch and one-quarter teaspoon salt. When the cakes are done split them open and lay on a dish with the hot cream over them and serve with it.

American Kitchen.—*Delicious Corn Coffee.*—Shell well ears of yellow corn, wash, fill a large kettle full and steam or boil for two hours in little water as possible, drain in a colander, then put it in large dripping pans and dry in a slow oven, stirring it occasionally; when dry put it away in a bag until it is desired for use, then put one or two pounds in a pan and brown in the oven, stirring it every two minutes until it is the color of browned coffee. Be very careful not to burn any, as one or two grains which are burned will spoil the entire lot. After it is cool put away in tin or glass vessels. Grind as you use it. Take a heaping tablespoonful of the ground corn for each cup of cold water used. Let it come to a boil for a minute, set it where it will keep hot and steep for fifteen minutes. Serve with good rich cream.—American Kitchen.

Ward's INODOROUS CONCENTRATED SOLUBLE PLANT FOOD.—<



THE HORSE.

Breed Good Horses.

There is now, and likely will be for another half century, perhaps longer, as strong and widespread a demand for horses that are adapted to the various capacities for which they are used, in city and country, as there ever was, and at prices that were never heard of in the experience of earlier breeders, but the call is for good horses only.

The question will be asked, by what means are good horses to be obtained?

It may be stated in reply that the first requisite is to be looked for in the sire of the stock intended to be raised.

He should have in his veins the greatest amount of pure blood, compatible with size, weight and power, according to the purpose; the blood-horse possesses these to a degree entirely out of proportion to the size or apparent strength of his frame, in the texture, form and symmetry of the bones; the elements of capacity for resistance and endurance are contained in the blood-horse many fold greater than those of similar character found in the common, cold-blooded cart horse.

The impression prevails with a class of breeders that the thoroughbred's principal use is upon the turf; that he is a race horse and without value, for any other purpose, but a casual study of the origin of the different breeds of magnificent draft, coach, road and saddle horses of the country, will disclose that this strongest factor of excellence and value is traceable to the proportion of thoroughbred blood used in laying the foundation of their ancestry, and the more of it that has been introduced in the beginning and resorted to in later generations, the better have been results.

It has been the practice of thoroughbred and skilled breeders, from the earliest times, to select suitable and good mares, sound, large and well formed, without much regard to their blood-lines and these were bred to the thoroughbred stallion, repeating the thorough infusion to the progeny for several generations and to such a course of breeding the present high standard of the different breeds of horses in this and other countries is largely indebted. Let the farmer then who keeps a few brood mares select the most desirable sire for his colts within reach, giving preference, other things being equal, to the preponderance of thoroughbred blood demonstrated in his pedigree.

To breed a fair average good mare to a small horse with the hope of getting a large colt; from a leggy, long-backed horse expecting the result of the mating to be one of short, compact and powerful build, or sound progeny from a broken-winded, blind, spavined or otherwise diseased sire would be a folly that no well regulated or prudent breeder would attempt, in these days of enlightenment and progress.

An eminent authority on this subject has said that the "blood" should always be on the sire's side and having inherited size, constitutional vigor, temper and other things that go towards desirability, leaving beauty of form, a roomy frame, long sloping hips, a wide chest and a generally perfect model, to the mare.

The horse for the farm breeders' purpose should be of medium height, say 15 1/2 hands, short, back well ribbed up, short in the saddle place, long below.

He should have high withers, broad loins, broad chest, straight rump, a high muscular, but not beefy chest; a lean, bony, well set head, clear, bright, well placed eyes, well apart, broad nostrils and small ears. His forelegs long, well muscled above the knees, also his hind legs above the hocks, lean, short, and bony below these joints. The bones cannot well be too flat, or too large, and the sinews ought to be straight, firm and hard to the touch.

From such a horse, if the breeder can find him, and from a well-chosen mare, she may be slightly larger, more bony, more roomy, and in every way, coarser than the horse, to the advantage of the progeny, sound, healthy and vigorous, the chances of getting a colt that prove a success to his skill as a breeder not only, but one of profit to him in a pecuniary sense, as well, will be reduced to the minimum.—Indian Farmer.

Now is a good time to trim trees if it has not been done before. Fruit trees should be scraped at the same time as far up as the tool will reach.

Treat your horse well and he will treat you well. Give him a bed of German Peat Moss, C. B. Barrett, 45 Market-street, Boston, Mass.

Boston Cooking School.

All ingredients mentioned in the following recipes are measured level.

The lesson given at the Cooking School Wednesday morning, Feb. 28, included the preparation of dishes suitable to serve at a ladies' luncheon, and Clam Broth, Crabs à la Richmond, Sweetbread Cutlets, Creamed Mushrooms in Timbale Cases, Salad Chiffonade and Pineapple Mousse were prepared before the audience. Miss Farmer suggested that it was better not to make preparations for entertaining guests directly after a holiday, as it was difficult to procure fresh supplies from the market. She also recommended serving the food in individual portions for a ladies' luncheon.

CLAM BROTH.—Wash carefully one-half peck clams and put in a kettle with one cupful of cold water. Cover and steam until the shells are well opened. Strain the liquor through a double thickness of cheese cloth, season with pepper and serve at once in bouillon cups, garnishing each with a spoonful of whipped cream.

The combination of the cream and broth was delicious.

Clam broth is especially valuable for use in illness and can be taken when but little else can be given.

CRABS à LA RICHMOND. Melt two tablespoonsful butter, and add two tablespoonsful flour; add one-third cupful milk and one-third cupful clam broth. Cook one cupful crab meat in one teaspoonful butter and two tablespoonsful sherry wine two minutes, and add to the sauce with the soft part of eighteen steamed clams and the yolk of one egg diluted with a little cream. Season with salt and cayenne; add one-third cupful brandy, and serve on crisp toast surrounded with

The meat of a dozen hard shelled crabs will generally give a cupful. Either shrimps or lobster can be prepared in the same way.

SWEETBREAD CUTLETS. Parboil one large sweetbread; cut fine, and mix with one half cupful French peas. Moisten with a thick cream sauce made with three tablespoonsful butter, one-third cupful flour and one cupful milk. Season highly with salt, pepper and cayenne. Cool, shape in cutlet forms, inserting a piece of macaroni in the end of each to simulate the bone of a cutlet, crumb and fry.

Quarter of a cupful of cornstarch may be used in place of the one-third cupful of flour.

CREAMED MUSHROOMS. Cook one-half pound mushrooms, broken in pieces, in two tablespoonsful butter five minutes; add one and one-half tablespoonsful flour and two-thirds cupful cream. When boiling add one-half tablespoonsful wine. Season with salt, pepper and cayenne, and serve in timbale cases.

TIMBALE CASES. Mix two-thirds cupful flour, one-half teaspoonful salt and one teaspoonful sugar; add slowly one-half cupful milk, one egg slightly beaten, and one tablespoonful olive oil. Shape with a thumb-iron, fry in deep fat and drain.

Melted butter may be used in place of the olive oil, but the latter will give more crisp timbale cases.

SALAD CHIFFONADE.—Shred two green peppers, remove the seeds, boil one minute and cool; shred one head of romaine, one large grape fruit cut in pieces, and three firm tomatoes cut in small pieces. Serve with a French dressing, marinating each one separately before putting them together.

Romaine is very similar to lettuce, and the latter may be used if romaine is not to be had. The combination of course gives a very pretty salad.

PINEAPPLE MOUSSE.—Soak one tablespoonful gelatine in one-fourth cupful cold water; add one cupful hot pineapple syrup, two tablespoonsful lemon juice and one cupful sugar. Strain and cool, color to a strawberry pink with Burnett's fruit red, and as the mixture thickens, fold in the whip from one quart thin cream. Pack in salt and ice four or five days of sunshine the soil will be in proper condition for sowing the various kinds of seeds. Before and after the seeds are sown the sash should be covered at night with straw matting, boards or blankets. The right temperature for daytime is from 70 to 80 degrees and should never fall below 55 degrees during the night. Do not air very soon after removing the covering in the morning, as such a proceeding has a tendency to cause young plants to "damp off," as the gardeners term it. Tarr'd paper makes excellent mats for hotbed sash. Some farmers make the hotbed a permanent affair, having the walls made of brick laid in mortar. The plan is practical and saves work every year. A brick hotbed will last, while a wooden-walled one will soon rot and have to be replaced.

A writer in an exchange says: "Certainly it is in the interest of economy for every farmer to raise his own plants for field culture. Not only is there saving of money, but also there is a stimulus to plant more and to enlarge operation to the full extent of the manure supply. Anywhere in city, village or country, where a dweller may secure a piece of ground six feet by three he may raise, year after year, at an initial cost of \$2.50, all the lettuce one family can consume and have, besides, an all-winter garden, a bit of summer at the door, to divert the mind, to cheer, to make brighter, and what makes brighter, makes better."

The first Institute of the season of the Marshfield Agricultural Society was held Feb. 17, 1898. The president, W. Hall presided.

The farmers and their wives in good numbers, considering the day was so cold and blustering, assembled to listen to an address upon poultry, by A. F. Hunter, but owing to illness, he could not be present. So the society was thrown upon its own resources, and as poultry was the subject announced, the forenoon was devoted to a discussion of that subject and was entered into in an animated manner by Messrs. Peterson, Bourne, Blackman, Harlow, Turner and others. A collation was served at noon, after which the president, who owns the Webster Farm, showed by figures that he had made the farm pay the past year. The subject of potato culture was afterwards taken up. Mr. Peterson said that for the scab on potatoes he had tried

the scab, best blisters ever used. Takes the place of all liniments for mild or severe action. SUPERBEDS ALL CANTER OF PINE. Impregnated with the best scab and scab. Price \$1.50 per bottle. Sold by druggists, or for its use send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland, O.



sulphur with good success, sprinkling it in the drill with the seed, and Mr. Bourne gave his method of planting and tending the crop.

The general opinion seemed to be that it was a very uncertain crop, it has so many enemies to contend with. A discussion upon fruit was then entered into; the president thought that peaches could be raised again along the South Shore by raising seedlings, and selecting the right land, neither too rich nor too poor.

The time was well taken up and it seems well sometimes for a society to be in a situation to have to depend upon home talent, as it gives a chance to hear from those that would probably not be heard from under other circumstances.

H. A. TURNER,
Norwell, Mass.

The Hotbed.

On farms where a hot bed has been used heretofore, all that is generally necessary, is to clean out all the old material to make ready for new, says the agricultural editor of the Baltimore Sun. On farms where a hotbed is to be made for the first time there are several things to consider. First of all, the importance of locating the hotbed in a suitable place should be remembered. A hillside, not too steep, that slopes to the south is an excellent place to make the hotbed. If there is a tight board fence or a building close to the location on the north side, so much the better, as it will afford great protection from cold, raw winds, and thereby afford additional warmth. The next thing to do is to dig out in the hillside a space the size required for the bed wanted. The lower side should have 18 inches of soil removed and the depth at the rear will naturally be greater. The frame must be arranged at the top to slope at an angle, to give enough incline to shed the rain and afford the sun a chance to have access. If the sash is too level the sun will not shine well inside. The sides, after the pit is dug, should be walled up with good boards, and it will be braced across top and bottom to prevent any bulging in after the soil is pressed down around the outside of the wall. The frame the sash rests on should rise about ten inches above the surrounding surface, and earth should be banked tightly up to the top on the outside, so as to cause all rain or moisture to run from the bed instead of settling around it. There should be from four to six inches of soil thrown in that is not frosted if the soil is frosted to the depth dug; if not, the soil will not be strictly necessary before the heating material is put in.

The best material for the hotbed is horse manure that has been carefully saved for several days and kept well packed in barrels. If the stable has been littered with dry leaves, it will improve the value of the manure for hotbed purposes. The manure is then put in the hotbed and trampled very firmly down. There should be at least a foot and a half after it is packed. On this put eight inches of fine, rich garden soil as can be obtained. Put on the sash, and after four or five days of sunshining the soil will be in proper condition for sowing the various kinds of seeds. Before and after the seeds are sown the sash should be covered at night with straw matting, boards or blankets. The right temperature for daytime is from 70 to 80 degrees and should never fall below 55 degrees during the night. Do not air very soon after removing the covering in the morning, as such a proceeding has a tendency to cause young plants to "damp off," as the gardeners term it. Tarr'd paper makes excellent mats for hotbed sash. Some farmers make the hotbed a permanent affair, having the walls made of brick laid in mortar. The plan is practical and saves work every year. A brick hotbed will last, while a wooden-walled one will soon rot and have to be replaced.

A writer in an exchange says: "Certainly it is in the interest of economy for every farmer to raise his own plants for field culture. Not only is there saving of money, but also there is a stimulus to plant more and to enlarge operation to the full extent of the manure supply. Anywhere in city, village or country, where a dweller may secure a piece of ground six feet by three he may raise, year after year, at an initial cost of \$2.50, all the lettuce one family can consume and have, besides, an all-winter garden, a bit of summer at the door, to divert the mind, to cheer, to make brighter, and what makes brighter, makes better."

The first lesson will be given at the rooms of the school, 372 Boylston St., Wednesday morning, March 2, beginning at ten o'clock. Consomme, Oysters à la Somerset, Chicken Timbales, Rolls, Shrimp Salad with Wine Jelly, and Imperial Pudding will be prepared. Single admission, fifty cents.

Farmers' Institute at Marshfield.

The first Institute of the season of the Marshfield Agricultural Society was held Feb. 17, 1898. The president, W. Hall presided.

The farmers and their wives in good numbers, considering the day was so cold and blustering, assembled to listen to an address upon poultry, by A. F. Hunter, but owing to illness, he could not be present. So the society was

thrown upon its own resources, and as poultry was the subject announced, the forenoon was devoted to a discussion of that subject and was entered into in an animated manner by Messrs. Peterson, Bourne, Blackman, Harlow, Turner and others. A collation was served at noon, after which the president, who owns the Webster Farm, showed by figures that he had made the farm pay the past year. The subject of potato culture was afterwards taken up. Mr. Peterson said that for the scab on potatoes he had tried

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Now is a good time to trim trees if it has not been done before. Fruit trees should be scraped at the same time as far up as the tool will reach.

Treat your horse well and he will treat you well. Give him a bed of German Peat Moss, C. B. Barrett, 45 Market-street, Boston, Mass.

Beacon Hill Notes.

The committee on agriculture has had under consideration the measure providing for legislation requiring a guarantee of health for all milk producing herds. These guarantees of good health were to be insisted upon by the local boards of health, who were authorized to withhold milk licenses from those who failed to get certificates of good health for their herds. But Mr. Frederick of Methuen stated that the measure had been misinterpreted by many of the farmers as a measure to allow the compulsory use of tuberculin, so he offered a substitute, to provide that all producers of milk outside of the State should be obliged to get certificates of health for their herds, either through the Milk Licensing Board, the Board of Health or the Cattle Commissioners. Representative Frederick spoke of the injustice of imposing rigid health regulations for Massachusetts producers, when competing producers just over the line in adjoining states were free to send milk down from herds that failed to pass the state health tests. He cited the instance of his nearest city, Lawrence, which was inflicted with milk from New Hampshire herds, many of whose cattle were animals that would be unable to secure health cards from Massachusetts authorities. Mr. Frederick thought the present law operated to the great disadvantage of the Massachusetts milk producers.

Dr. Peters of the Cattle Commissioners offered the information that the Lynn Board of Health imposed health regulations on all milk sold in that city, including milk that came from New Hampshire. Dr. Burr of the Boston Health Board thought that the Lawrence Board had authority and power to impose and enforce regulations for a pure milk supply. Dr. Burr said further, that while it was a fact that certain health authorities imposed these restrictions, there would probably be trouble if the rule was a general one, without legislation conveying authority that is now taken.

Dr. Alexander Burr of the Boston Board of Health thought the original bill introduced by Representative Frederick a good measure and in the right direction with the single exception of the possibility of all wing boards of health to insist upon the tuberculin test as the guarantee of health for herds. To Mr. Harrington of Lunenburg, Dr. Burr admitted that health officers had no right to inspect barns or stables or milk depots outside of the limits of their own cities or towns. Dr. Burr thought that the health authorities had the right to prevent the receipt of milk from places that were regarded to be in an unsanitary condition, although the barn or stable might be located without the jurisdiction of the local health board.

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